

## **SYSTEM AND METHOD FOR ROUTER QUEUE AND CONGESTION MANAGEMENT**

### **ABSTRACT OF THE DISCLOSURE**

In a multi-QOS level queuing structure, packet payload pointers are stored in multiple queues and packet payloads in a common memory pool. Algorithms control the drop probability of packets entering the queuing structure. Instantaneous drop probabilities are obtained by comparing measured instantaneous queue size with calculated minimum and maximum queue sizes. Non-utilized common memory space is allocated simultaneously to all queues. Time averaged drop probabilities follow a traditional Weighted Random Early Discard mechanism. Algorithms are adapted to a multi-level QOS structure, floating point format, and hardware implementation. Packet flow from a router egress queuing structure into a single egress port tributary is controlled by an arbitration algorithm using a rate metering mechanism. The queuing structure is replicated for each egress tributary in the router system.

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